

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



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SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Eighth Edition 2017.

TRAFFIC DATA

Current (2018) AADT	1900
Future (2038) AADT	2280
DHV - % of AADT	11
Design Hour Volume	251
Heavy Trucks (% of AADT)	19
Heavy Trucks (% of DHV)	15
Directional Distribution (% of DHV)	51
18 kip Equivalent P 2.0	473
18 kip Equivalent P 2.5	451
Design Speed (mph)	50

HYDROLOGIC DATA

Drainage Area	2.56 sq mi
Design Discharge (Q50)	221.6 cfs
Check Discharge (Q100)	259.4 cfs
Headwater Elevation (Q1.1)	397.9 ft
Headwater Elevation (Q25)	400.8 ft
Headwater Elevation (Q50)	401.2 ft
Headwater Elevation (Q100)	401.7 ft
Discharge Velocity (Q1.1)	5.5 fps
Discharge Velocity (Q50)	9.1 fps
Discharge Velocity (Q100)	9.7 fps

MATERIALS

Invert Lining	Shotcrete or Class "A"
Reinforcing Steel	ASTM A 615, Grade 60

BASIC DESIGN STRESSES

Concrete:	
Class "A" Concrete	f 'c = 4000 psi
Shotcrete	f 'c = 5000 psi
Reinforcing Steel	f y = 60,000 psi

NEW PORTLAND SOMERSET COUNTY PROCTOR BROOK BRIDGE OVER MEADOW BROOK ROUTE 16 FEDERAL AID PROJECT NO. STP-2188(800) BRIDGE NO. 5943

UTILITIES

Spectrum
Somerset Telephone
Central Maine Power

MAINTENANCE OF TRAFFIC

Daytime Short-Term Lane Closures.

PROJECT LOCATION	Proctor Brook Bridge #5943 in New Portland carrying Rte. 16 over Meadow Brook. Located 0.27 of a mile northwest of Tower Road. Lat./Long. 44°-54'-56.6" N 70°-00'-30.0" W
PROGRAM AREA	Highway Bridges - Traditional
OUTLINE OF WORK	Bridge Culvert Rehabilitation

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER: <i>[Signature]</i>	9/25/18	9-24-18
CHIEF ENGINEER: <i>[Signature]</i>		

SIGNATURE: <i>[Signature]</i> P.E. NUMBER: 14372 DATE: 18 September 2018

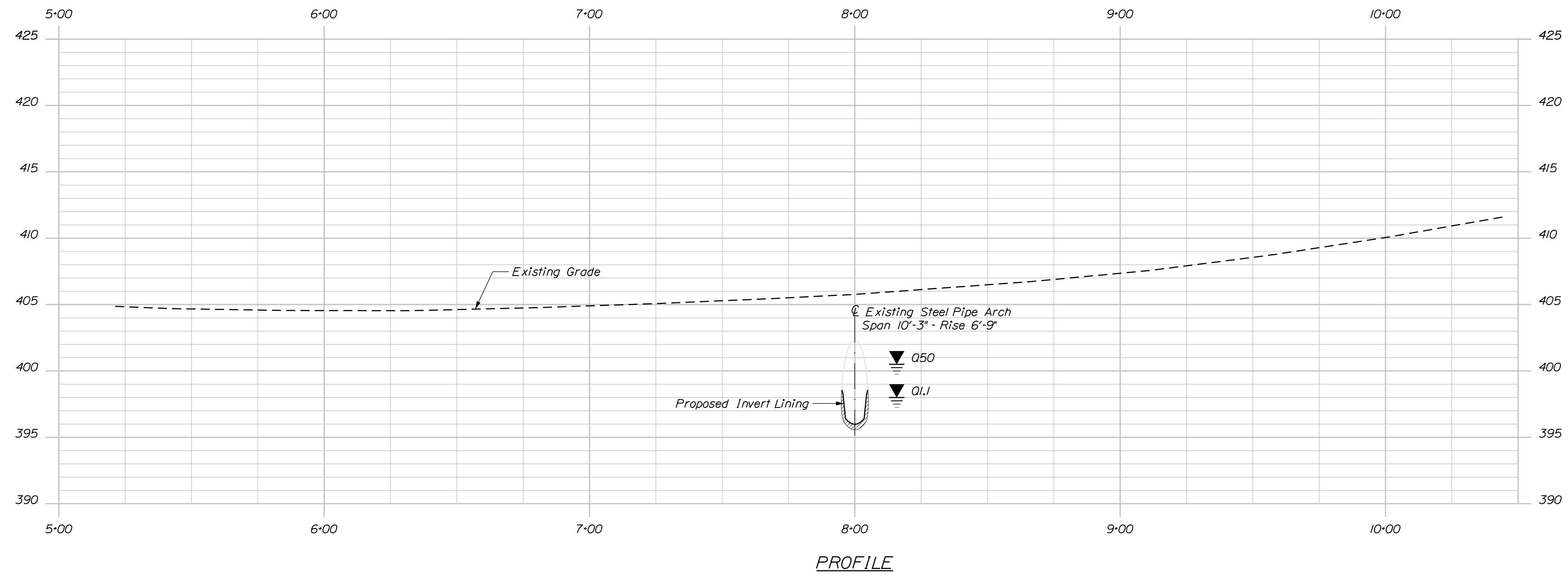
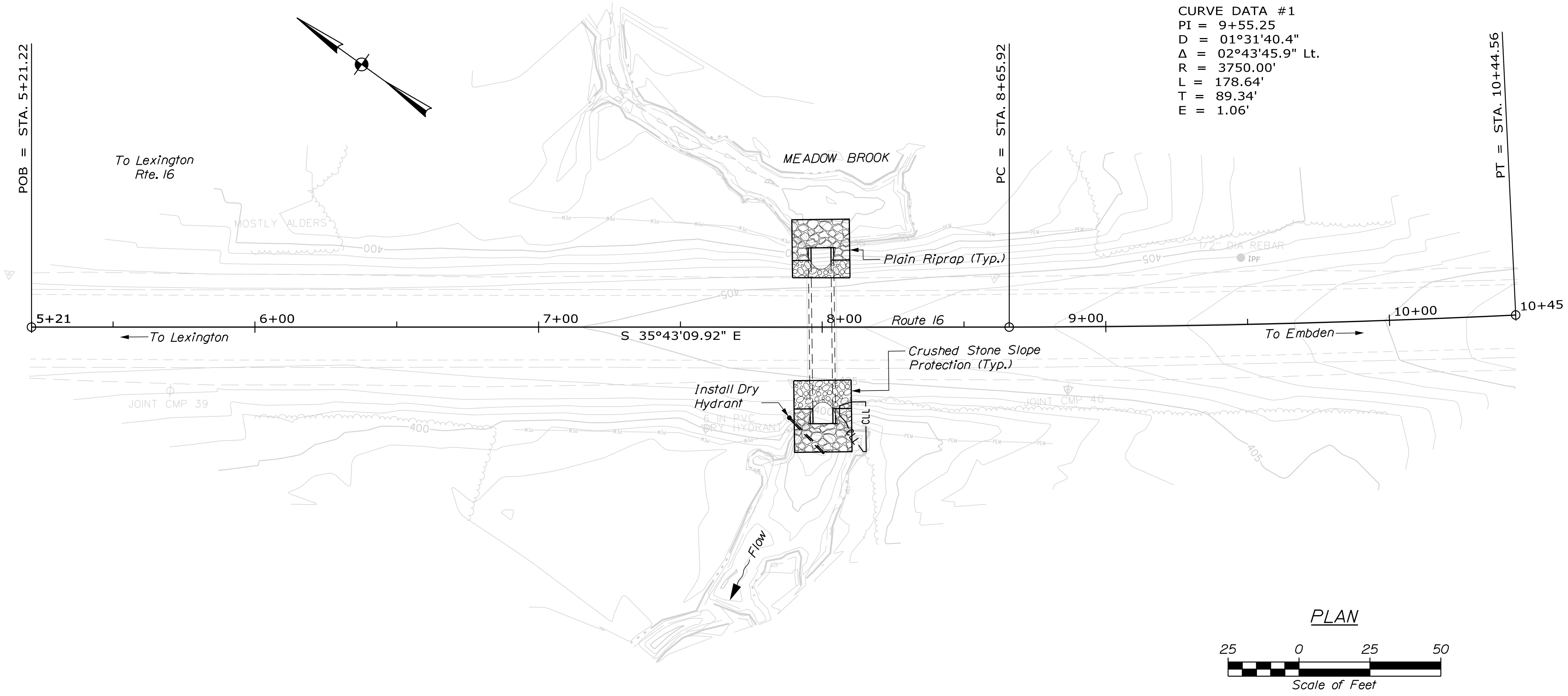
PROJECT INFORMATION	
PROGRAM	BRIDGE
PROJECT MANAGER	MARK PAKLIN
DESIGNER	JOSHUA HASBROUCK
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

NEW PORTLAND PROCTOR BROOK BRIDGE	TITLE SHEET
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SHEET NUMBER
1
OF 8

021888.00 WIN 21888.00

Filename: \\00\BRIDGE\MSTA\001_Title.dgn Division: BRIDGE User: Joshua.P.Hasbrouck Date: 9/10/2018



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2188(800)
BRIDGE NO. 5943 WIN 21888.00
BRIDGE PLANS

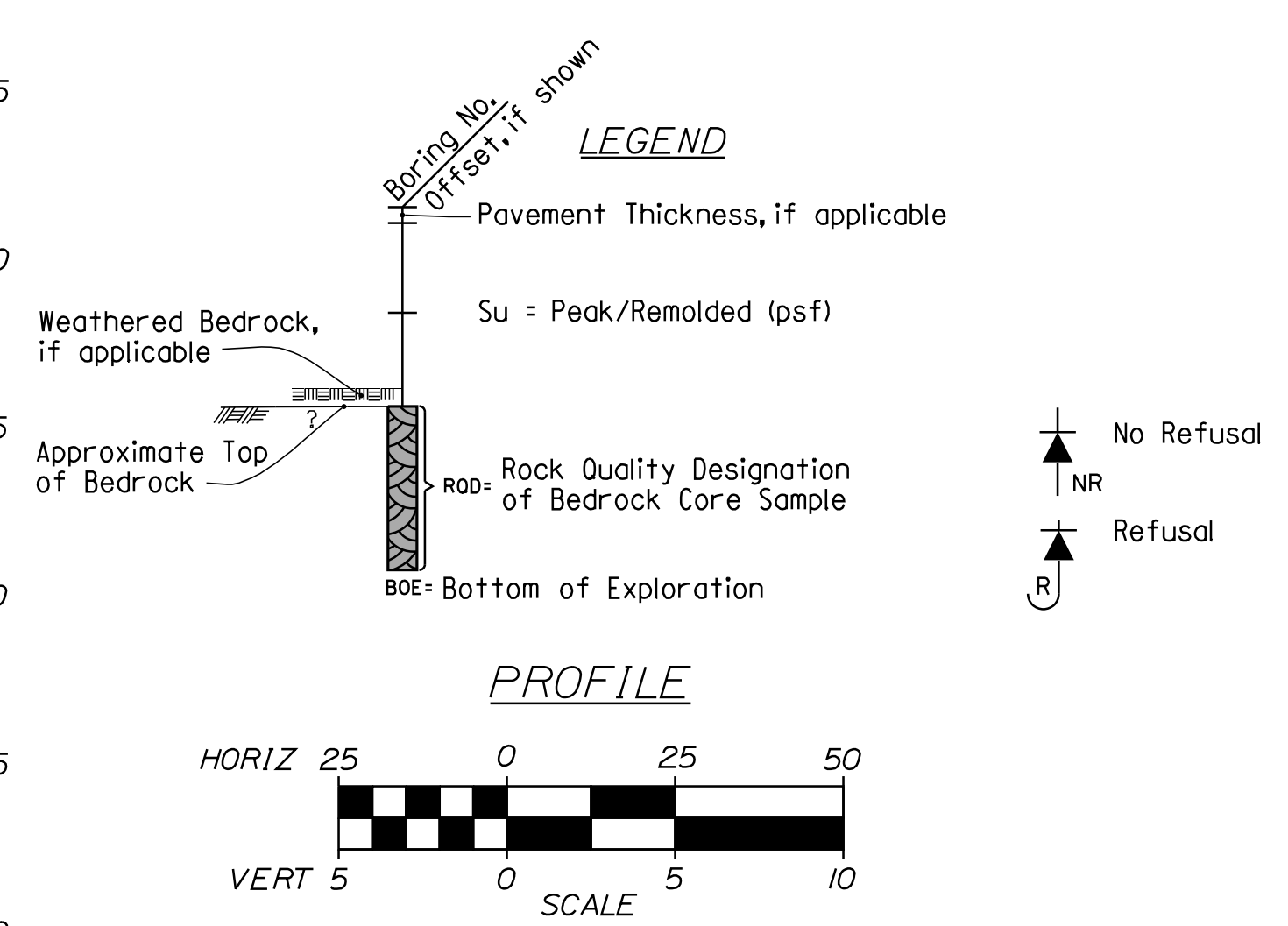
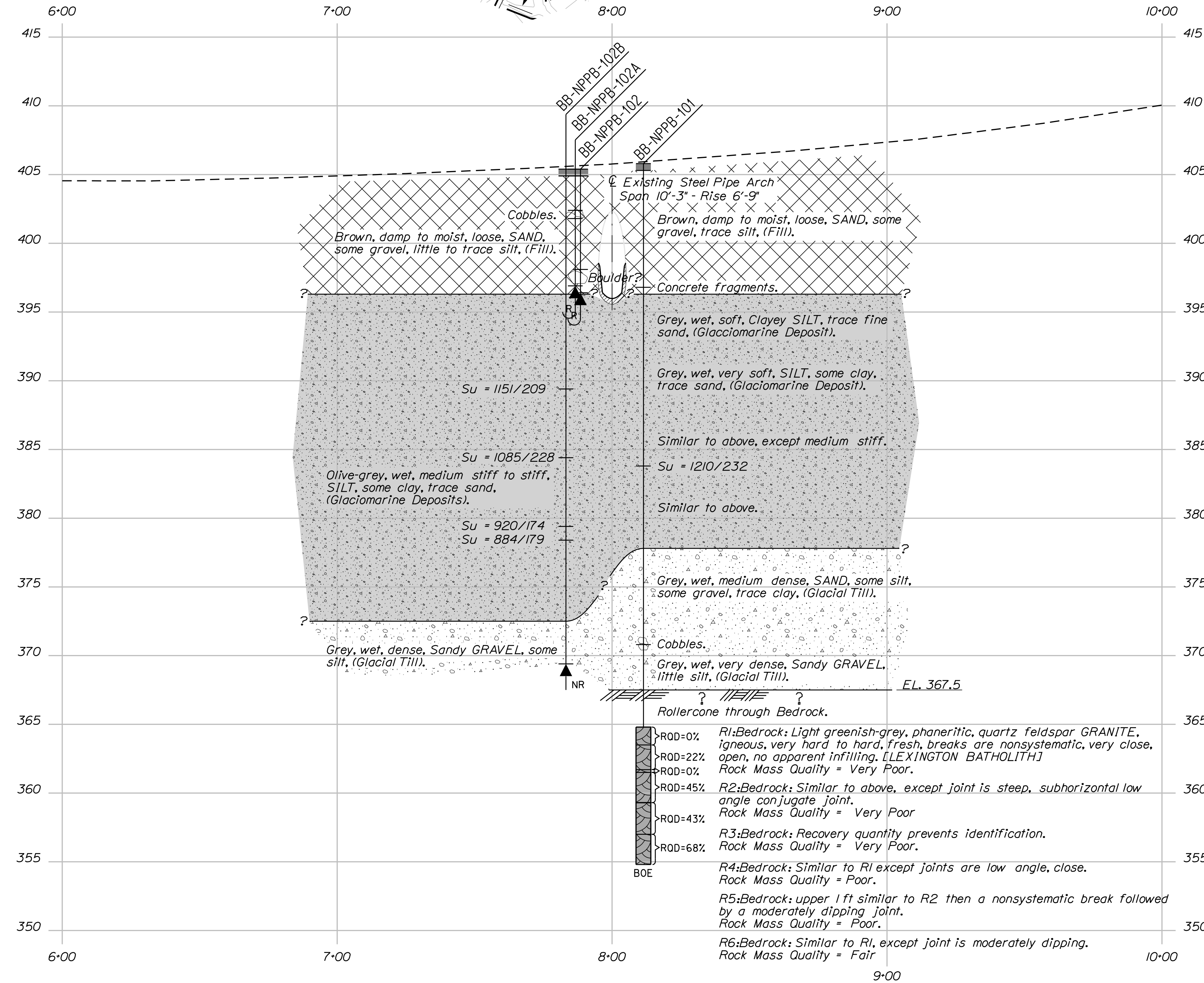
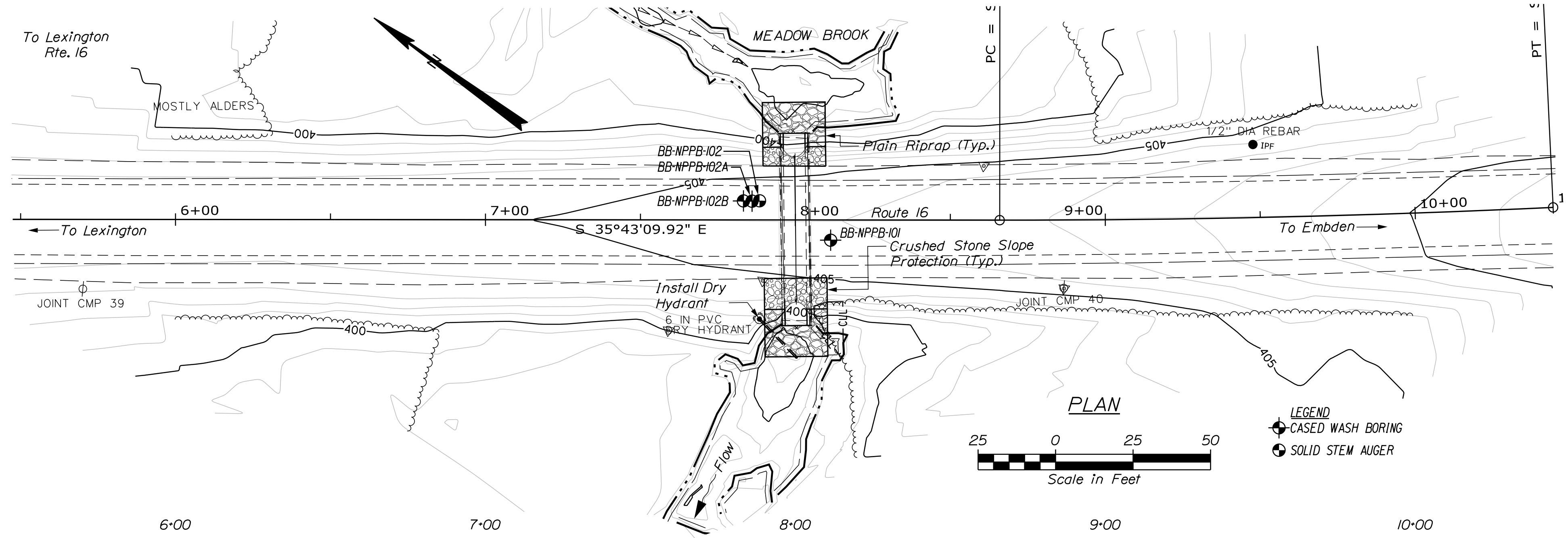
DESIGN-DETAILED	J. HASBROUCK	M.R.P.	JULY 2018	SIGNATURE
CHECKED-REVIEWED	R. MYERS	I. WHITE	SEPT 2018	P.E. NUMBER
DESIGN-DETAILED	B. SLAVEN		JAN 2018	DATE
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

PROJ. MANAGER	M. PARLIN	BY	DATE
DESIGN-DETAILED	J. HASBROUCK	M.R.P.	JULY 2018
CHECKED-REVIEWED	R. MYERS	I. WHITE	SEPT 2018
DESIGN-DETAILED	B. SLAVEN		JAN 2018
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

PROCTOR BROOK BRIDGE
MEADOW BROOK
NEW PORTLAND SOMERSET COUNTY
PLAN AND PROFILE

SHEET NUMBER
3
OF 8

Filename: ... \GEO\TECH\MSTA\004_BLP&SP1.dgn Division: BRIDGE
 Username: Joshua.P.Hasbrouck Date: 9/18/2018



Note: This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil and bedrock transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2188(800)		WIN	
BRIDGE NO. 5943		21885.00	
BRIDGE PLANS			
PROJ. MANAGER	M. PARLIN	DATE	DATE
CHECKED/REVIEWED	J. HASBROUCK/M.R.P.	JULY 2018	SIGNATURE
DESIGN DETAILER	T. WHITE	JAN 2018	P.E. NUMBER
REVISIONS 1			DATE
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
PROCTOR BROOK BRIDGE			
MEADOW BROOK			
SOMERSET COUNTY			
NEW PORTLAND			
BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE			
SHEET NUMBER			
4			
OF 8			

Maine Department of Transportation Soil/Borehole Exploration Log US CUSTOMARY UNITS		Project: Proctor Brook Bridge #563 Corridor: Route 16 over Meadow Location: New Portland, Maine		Boring No.: BB-NPPB-102B WIN: 21888_00						
Operator:	Scott Hill/Robb	Operator:	Scott Hill/Robb	Sampler:	Split-Spoon					
Logged By:	Nathan Strout	Logged By:	Nathan Strout	Sampler:	Split-Spoon					
Date Start/Finish:	1/26/2017 / 1/26/2017	Date Start/Finish:	1/26/2017 / 1/26/2017	Core Barrel:	NO 2"					
Boring Location:	7483.2, 6.1 ft Lt.	Coring Method:	Case-Wash	Water Level:	6.7' (after drilling)					
Home Efficiency Factor:	0.9288	Home Type:	Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>							
<p>Definitions: S_u = Peak/Retained Field Vane Undrained Shear Strength (kPa) T_v = Pocket Torque Shear Strength (kPa) S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected</p>										
Depth (ft.)	Sample No.	Pen./Rec. (in)	Sample Depth (ft.)	Blows (1/6 in. of rod)	Penetration (lb/ft)	Humidity (%)	Moisture (%)	Grain Size Analysis	Visual Description and Remarks	Laboratory Testing Results/ASTM and Unified Class
0			0						6" of Pavement	
5			5						Soil samples not retrieved from 0 to 9 ft bgs. Soils similar to BB-NPPB-102 0 to 9 ft bgs.	
10	24/20	9.00 - 11.00	2/2/3/4	5	8	25	396.4		10(B) Brown, wet, loose, SAND, some silt, trace gravel, trace clay, trace organics.	GW21082 A-4, CL LL=30 PL=20 PI=7
15	24/24	14.00 - 14.97	2/3/4/4	---	23	25	396.4		Similar to above, except stiff.	GW21084 A-4, CL LL=29 PL=20 PI=8
20	24/24	19.00 - 19.96	2/3/4/4	---	28	25	396.4		Grey, wet, stiff, SILT, some clay, trace sand.	GW21085 A-4, CL LL=30 PL=20 PI=7
25	24/24	24.00 - 24.97	2/3/4/4	---	39	25	396.4		Similar to above, except medium stiff.	GW21086 A-4, CL LL=30 PL=20 PI=7
30	24/24	29.00 - 31.00	3/3/3/3	6	9	OPEN	396.4		Grey, wet, stiff, Silty CLAY with fine sand seams 1/16" thick. (Glacialine Deposit).	
35	24/10	34.00 - 35.00	12/13/14/15	27	42		396.4		Grey, wet, dense, SANDY GRAVEL, some silt, (Glacial Till).	GW21086 A-4, CL LL=30 PL=20 PI=7
40							396.4		Bottom of Exploration at 36.0 feet below ground surface.	

Maine Department of Transportation Soil/Borehole Exploration Log US CUSTOMARY UNITS		Project: Proctor Brook Bridge #563 Corridor: Route 16 over Meadow Location: New Portland, Maine		Boring No.: BB-NPPB-102A WIN: 21888_00						
Operator:	Scott Hill/Robb	Operator:	Scott Hill/Robb	Sampler:	Split-Spoon					
Logged By:	Nathan Strout	Logged By:	Nathan Strout	Sampler:	Split-Spoon					
Date Start/Finish:	1/26/2017 / 1/26/2017	Date Start/Finish:	1/26/2017 / 1/26/2017	Core Barrel:	NO 2"					
Boring Location:	7486, 6.1 ft Lt.	Coring Method:	Case-Wash	Water Level:	6.7' (after drilling)					
Home Efficiency Factor:	0.9288	Home Type:	Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>							
<p>Definitions: S_u = Peak/Retained Field Vane Undrained Shear Strength (kPa) T_v = Pocket Torque Shear Strength (kPa) S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected</p>										
Depth (ft.)	Sample No.	Pen./Rec. (in)	Sample Depth (ft.)	Blows (1/6 in. of rod)	Penetration (lb/ft)	Humidity (%)	Moisture (%)	Grain Size Analysis	Visual Description and Remarks	Laboratory Testing Results/ASTM and Unified Class
0			0						6" of Pavement	
5			5						Soil samples not retrieved. Soils similar to BB-NPPB-102 from 0 to 9 ft bgs.	
10			10						Casing refusal at 7.3 ft bgs. Probable cobbles/boulders from 1.3 to 8.5 ft bgs. Relocate boring. See log BB-NPPB-102B.	
15			15						Bottom of Exploration at 8.5 feet below ground surface.	
20			20							
25			25							
30			30							
35			35							
40			40							
45			45							
50			50							

Maine Department of Transportation Soil/Borehole Exploration Log US CUSTOMARY UNITS		Project: Proctor Brook Bridge #563 Corridor: Route 16 over Meadow Location: New Portland, Maine		Boring No.: BB-NPPB-102 WIN: 21888_00						
Operator:	Scott Hill/Robb	Operator:	Scott Hill/Robb	Sampler:	Split-Spoon					
Logged By:	Nathan Strout	Logged By:	Nathan Strout	Sampler:	Split-Spoon					
Date Start/Finish:	1/26/2017 / 1/26/2017	Date Start/Finish:	1/26/2017 / 1/26/2017	Core Barrel:	NO 2"					
Boring Location:	7488.5, 6.1 ft Lt.	Coring Method:	Case-Wash	Water Level:	6.7' (after drilling)					
Home Efficiency Factor:	0.9288	Home Type:	Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>							
<p>Definitions: S_u = Peak/Retained Field Vane Undrained Shear Strength (kPa) T_v = Pocket Torque Shear Strength (kPa) S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected</p>										
Depth (ft.)	Sample No.	Pen./Rec. (in)	Sample Depth (ft.)	Blows (1/6 in. of rod)	Penetration (lb/ft)	Humidity (%)	Moisture (%)	Grain Size Analysis	Visual Description and Remarks	Laboratory Testing Results/ASTM and Unified Class
0			0						6" of Pavement	
5			5						Brown, damp, SAND, some gravel, trace silt, (fill).	
10	5/4	1.50 - 1.92	100-5"	---	---	---	---	---	Drill action suggests cobbles from 3 to 3.5 ft bgs.	
15	17/6	5.00 - 6.42	2/2/100-5"	---	---	---	---	---	Brown, moist, SAND, some gravel, little silt, (fill).	
20									Probable boulder at from 6.4 to 8 ft bgs. NW casing would not penetrate through obstruction. Relocate boring. See log BB-NPPB-102A.	
25									Bottom of Exploration at 9.0 feet below ground surface.	
30										
35										
40										
45										
50										

Maine Department of Transportation Soil/Borehole Exploration Log US CUSTOMARY UNITS		Project: Proctor Brook Bridge #563 Corridor: Route 16 over Meadow Location: New Portland, Maine		Boring No.: BB-NPPB-101 WIN: 21888_00						
Operator:	Scott Hill/Robb	Operator:	Scott Hill/Robb	Sampler:	Split-Spoon					
Logged By:	Nathan Strout	Logged By:	Nathan Strout	Sampler:	Split-Spoon					
Date Start/Finish:	1/25/2017 / 1/26/2017	Date Start/Finish:	1/25/2017 / 1/26/2017	Core Barrel:	NO 2"					
Boring Location:	8411.4, 6.5 ft Rt.	Coring Method:	Case-Wash	Water Level:	6.1' (after drilling)					
Home Efficiency Factor:	0.9288	Home Type:	Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>							
<p>Definitions: S_u = Peak/Retained Field Vane Undrained Shear Strength (kPa) T_v = Pocket Torque Shear Strength (kPa) S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Soil Shear Capacity S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Unconfined Compressive Strength (kPa) S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Thin Wall Shear Capacity S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Field Vane Shear Test S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Unconfined Field Vane Shear Test Strength S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected S_u = Home Efficiency Factor/0.9288-uncorrected</p>										
Depth (ft.)	Sample No.	Pen./Rec. (in)	Sample Depth (ft.)	Blows (1/6 in. of rod)	Penetration (lb/ft)	Humidity (%)	Moisture (%)	Grain Size Analysis	Visual Description and Remarks	Laboratory Testing Results/ASTM and Unified Class
0			0						6" of Pavement	
5			5						Brown, damp, SAND, some gravel, trace silt, (fill).	
10	24/20	9.00 - 11.00	2/2/3/4	5	8	25	396.4		10(B) Brown, wet, loose, SAND, some silt, trace gravel, trace clay, trace organics.	GW21077 A-4, CL LL=30 PL=20 PI=7
15	24/24	14.00 - 14.97	2/3/4/4	---	23	25	396.4		Similar to above, except stiff.	GW21078 A-4, CL LL=29 PL=20 PI=8
20	24/24	19.00 - 19.96	2/3/4/4	---	28	25	396.4		Grey, wet, soft, Clayey SILT, trace fine sand, slightly plastic. (Glacialine Deposit).	GW21079 A-4, CL LL=30 PL=20 PI=7
25	24/24	24.00 - 24.97	2/3/4/4	---	39	25	396.4		Similar to above, except medium stiff.	GW21080 A-4, CL LL=30 PL=20 PI=7
30	24/24	29.00 - 31.00	3/3/3/3	6	9	OPEN	396.4		Grey, wet, medium dense, SAND, some silt, some gravel, trace clay. (Glacial Till).	GW21081 A-4, CL LL=30 PL=20 PI=7
35	24/10	34.00 - 35.00	12/13/14/15	27	42		396.4		Place NW casing cobbles.	
40							396.4		Grey, wet, very dense, SANDY GRAVEL, little silt, (Glacial Till).	
45							396.4		Top of Bedrock at El. 367.5 ft. R1 corerone through Bedrock from 38.3 to 41 ft bgs.	
50							396.4		R1Bedrock: Light greenish-grey, shaly, quartz feldspar GRANITE, igneous, very hard to hard, fresh, breaks are non-systematic, very close, open, no apparent fracturing. (LEXINGTON Batholith) Rock Mass Quality = Very Poor. R1Core Times (min):sec) 41-42 ft (2:31) 42-43 ft (1:38) 43-44 ft (1:33) 44-45 ft (1:24) 45-46 ft (1:24) 46-47 ft (1:24) 47-48 ft (1:24) 48-49 ft (1:24) 49-50 ft (1:24) 50-51 ft (1:24) Recovery = 100%	
55							396.4		R2Bedrock: Similar to above, except joint is steep, subhorizontal low angle conjugate joint. Rock Mass Quality = Very Poor. Recovery = 100% R2Core Times (min):sec) 42-43 ft (2:16) 43-44 ft (1:33) 44-45 ft (1:24) 45-46 ft (1:24) 46-47 ft (1:24) 47-48 ft (1:24) 48-49 ft (1:24) 49-50 ft (1:24) 50-51 ft (1:24) Recovery = 100%	
60							396.4		R3Bedrock: Recovery quantity prevents identification. Rock Mass Quality = Very Poor. R3Core Times (min):sec) 41-43 ft (1:31) 43-44 ft (1:31) 44-45 ft (1:31) 45-46 ft (1:31) 46-47 ft (1:31) 47-48 ft (1:31) 48-49 ft (1:31) 49-50 ft (1:31) 50-51 ft (1:31) Recovery = 100%	
65							396.4		R4Bedrock: Similar to R1, except joint is low angle, close. Rock Mass Quality = Poor. R4Core Times (min):sec) 41-43 ft (1:17) 43-44 ft (1:17) 44-45 ft (1:17) 45-46 ft (1:17) 46-47 ft (1:17) 47-48 ft (1:17) 48-49 ft (1:17) 49-50 ft (1:17) 50-51 ft (1:17) Recovery = 100%	
70							396.4		R5Bedrock: Similar to R1, except joint is moderately dipping. Rock Mass Quality = Fair. R5Core Times (min):sec) 41-43 ft (1:02) 43-44 ft (1:02) 44-45 ft (1:02) 45-46 ft (1:02) 46-47 ft (1:02) 47-48 ft (1:02) 48-49 ft (1:02) 49-50 ft (1:02) 50-51 ft (1:02) Recovery = 100%	
75							396.4		Bottom of Exploration at 51.0 feet below ground surface.	

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2188(800)
WIN 21888.00
BRIDGE NO. 5943
BRIDGE PLANS

PROCTOR BROOK BRIDGE
MEADOW BROOK
NEW PORTLAND SOMERSET COUNTY
BORING LOGS

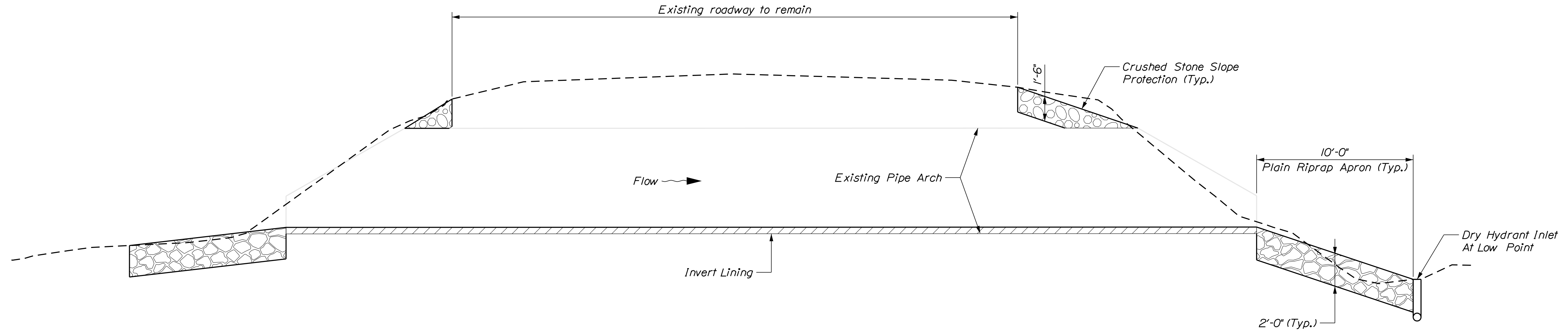
SHEET NUMBER **5** OF 8

DESIGN-DETAILED: J. HASBROUCK
 CHECKED-REVIEWED: J. HASBROUCK
 DESIGN-DETAILED: B. JAVEN
 DESIGNS DET. FILED: T. WHITE
 REVISIONS: 1
 REVISIONS: 2
 REVISIONS: 3
 REVISIONS: 4

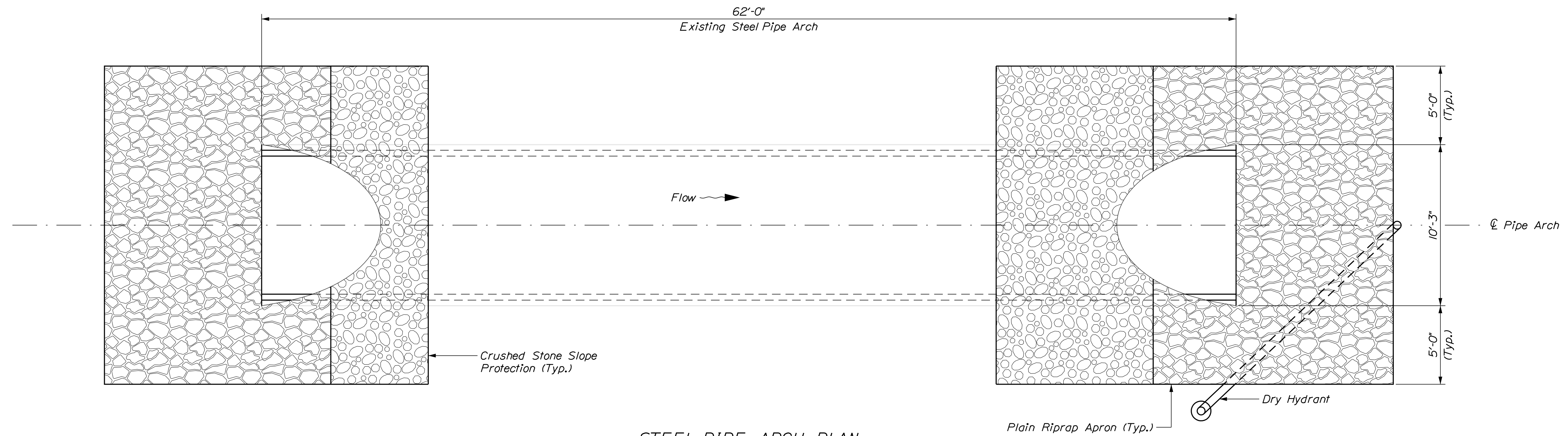
DATE: JULY 2018
 DATE: JAN 2018
 SIGNATURE: _____
 P.E. NUMBER: _____
 DATE: _____

PROJ. MANAGER: M. PARLIN
 BY: J. HASBROUCK
 DATE: JULY 2018
 CHECKED-REVIEWED: J. HASBROUCK
 DATE: JAN 2018
 DESIGN-DETAILED: B. JAVEN
 DESIGNS DET. FILED: T. WHITE

PROJ. MANAGER: M. PARLIN
 BY: J. HASBROUCK
 DATE: JULY 2018
 CHECKED-REVIEWED: J. HASBROUCK
 DATE: JAN 2018
 DESIGN-DETAILED: B. JAVEN
 DESIGNS DET. FILED: T. WHITE



LONGITUDINAL STEEL PIPE ARCH SECTION



STEEL PIPE ARCH PLAN

PIPE NOTES:

1. All debris in the existing pipe shall be removed. Surfaces of the pipe against which concrete is to be placed shall be thoroughly cleaned so as to remove all loose corrosion. In areas where the metal is non-existent, a preliminary concrete placement shall be made, using forms where required, to fill voids and to establish the original lines of the pipe. The final placement shall then be made as shown. Payment for this work will be considered incidental to Item No. 502.325, Structural Concrete Invert Lining.

2. Three rows of stud anchors shall be staggered longitudinally at 12" spacing along each side of the culvert. Stud anchors shall be 1/2" diameter x 3" studs welded to the crests of the corrugations. Approximately 376 studs are required. Studs shall not be paid for directly. Payment will be considered incidental to item 502.325, Structural Concrete Culvert Invert Lining.

3. Reinforcing steel shall have a minimum concrete cover of 2" unless otherwise shown.

4. The existing structural plate pipe may have a slight deformation requiring field bending and/or cutting of the reinforcing steel. Any cutting and bending to field fit reinforcing steel shall be considered incidental to Item No. 503.13, Reinforcing Steel-Placing

5. Asphalt Emulsion will be considered incidental to item No. 502.325 Structural Concrete Invert Lining.

6. Wash in excavated dredge material to fill the voids of the riprap during placement of the riprap aprons upstream and downstream.

DESIGNED	DATE	SIGNATURE
CHECKED	DATE	P.E. NUMBER
DESIGNED	DATE	DATE

PROJ. MANAGER	BY	DATE
DESIGN DETAILED	M.R.P.	JULY 2018
CHECKED	R. MYERS	SEPT 2018
DESIGN DETAILED	T. WHITE	JAN 2018
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

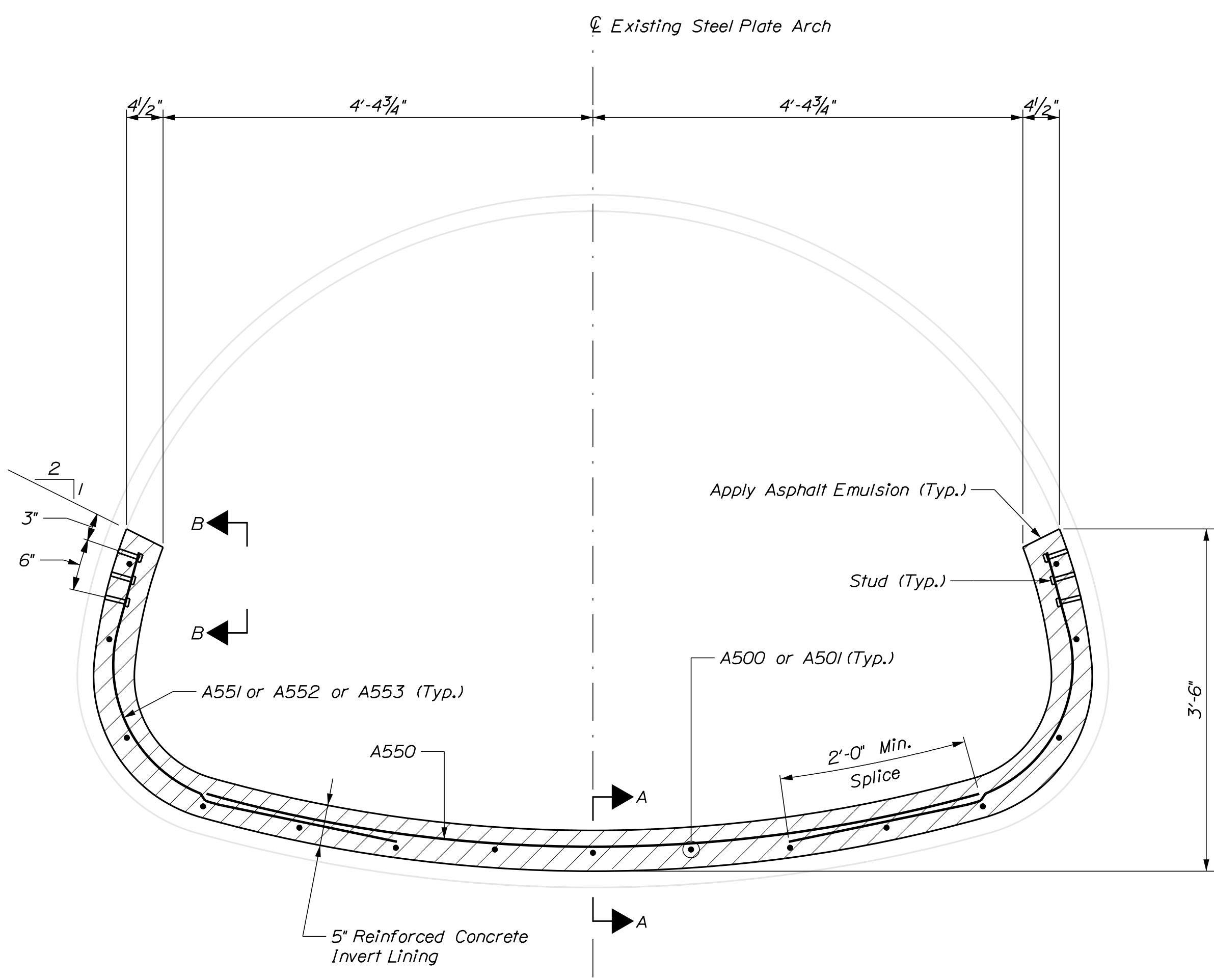
PROCTOR BROOK BRIDGE
MEADOW BROOK
NEW PORTLAND SOMERSET COUNTY
INVERT LINING DETAILS

SHEET NUMBER

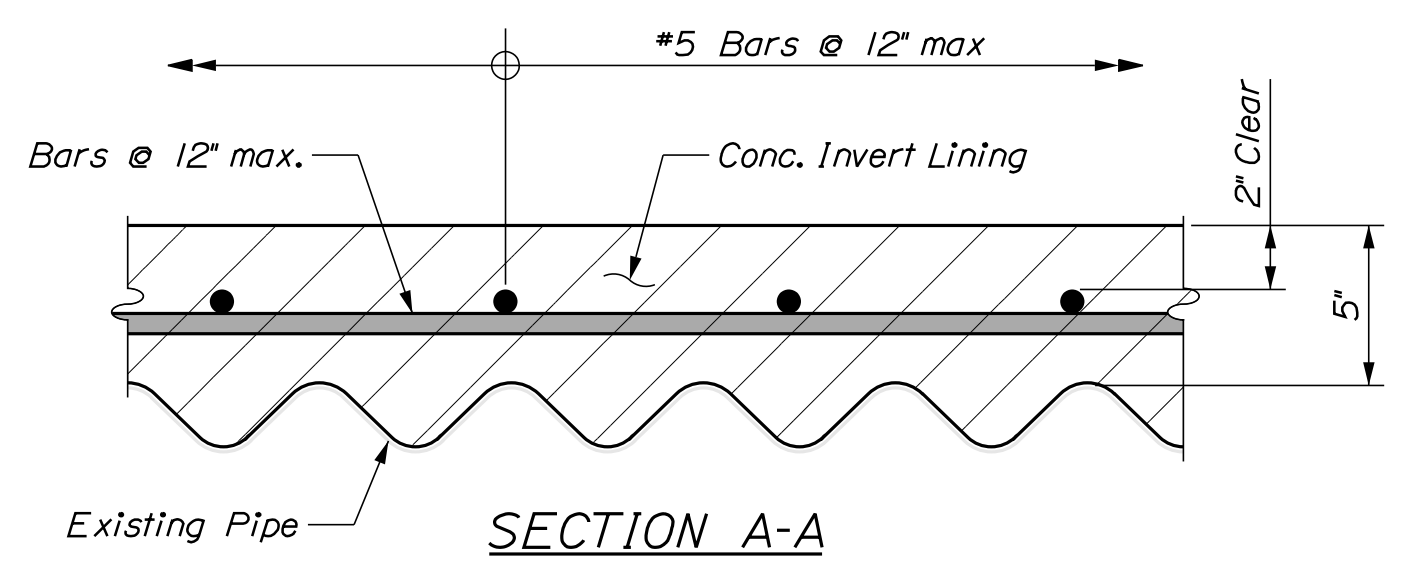
6

OF 8

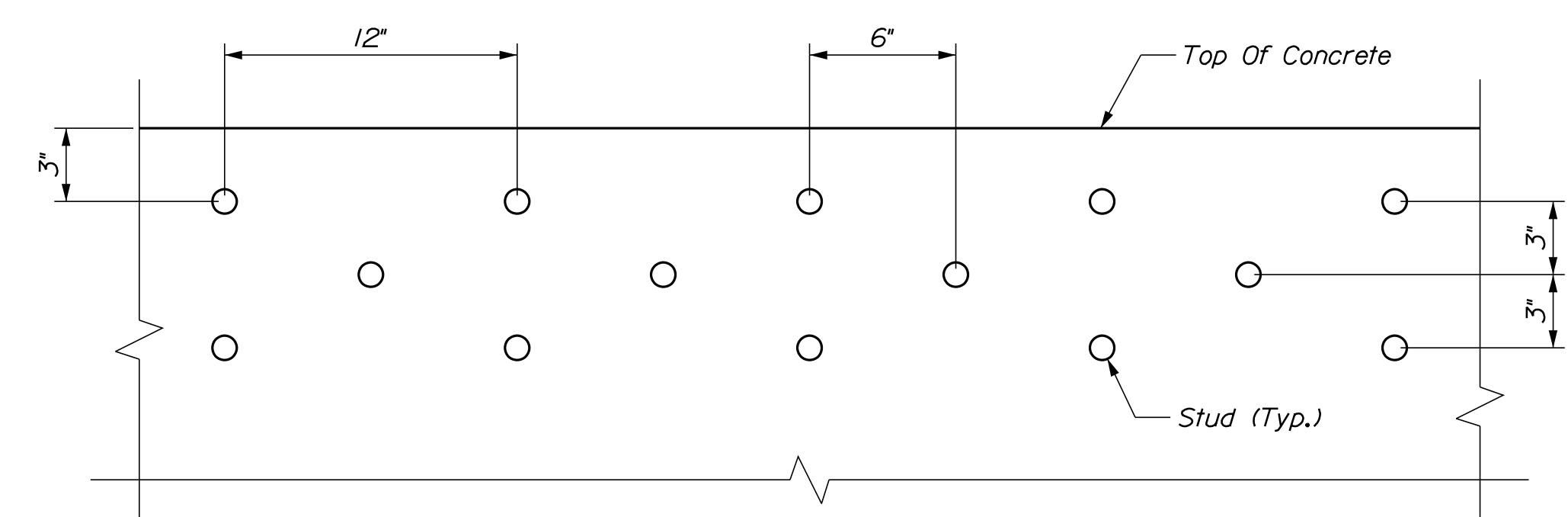
Filename: ... \007_Invert_Lining_Details-2.dgn Division: BRIDGE Date: 9/18/2018 Username: Joshua.P.Hasbrouck



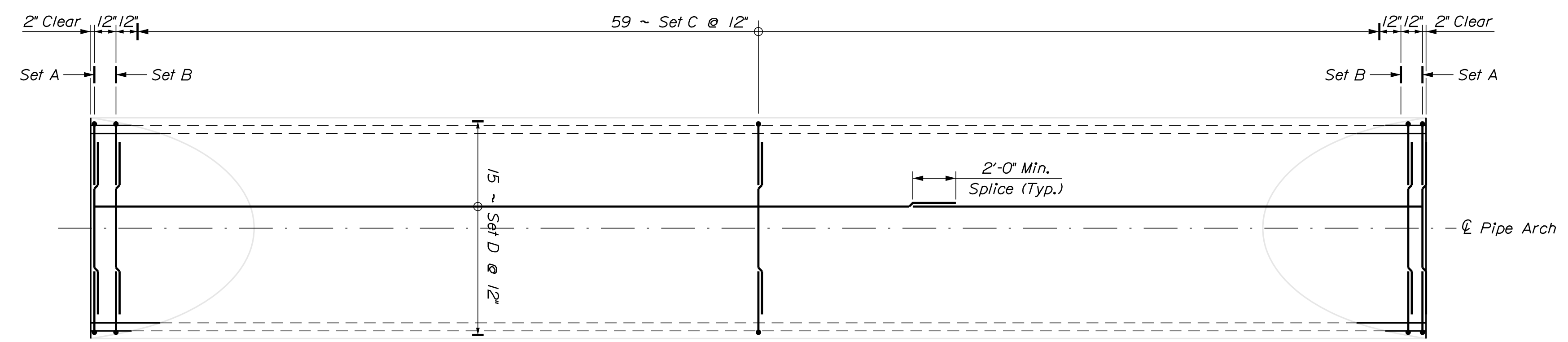
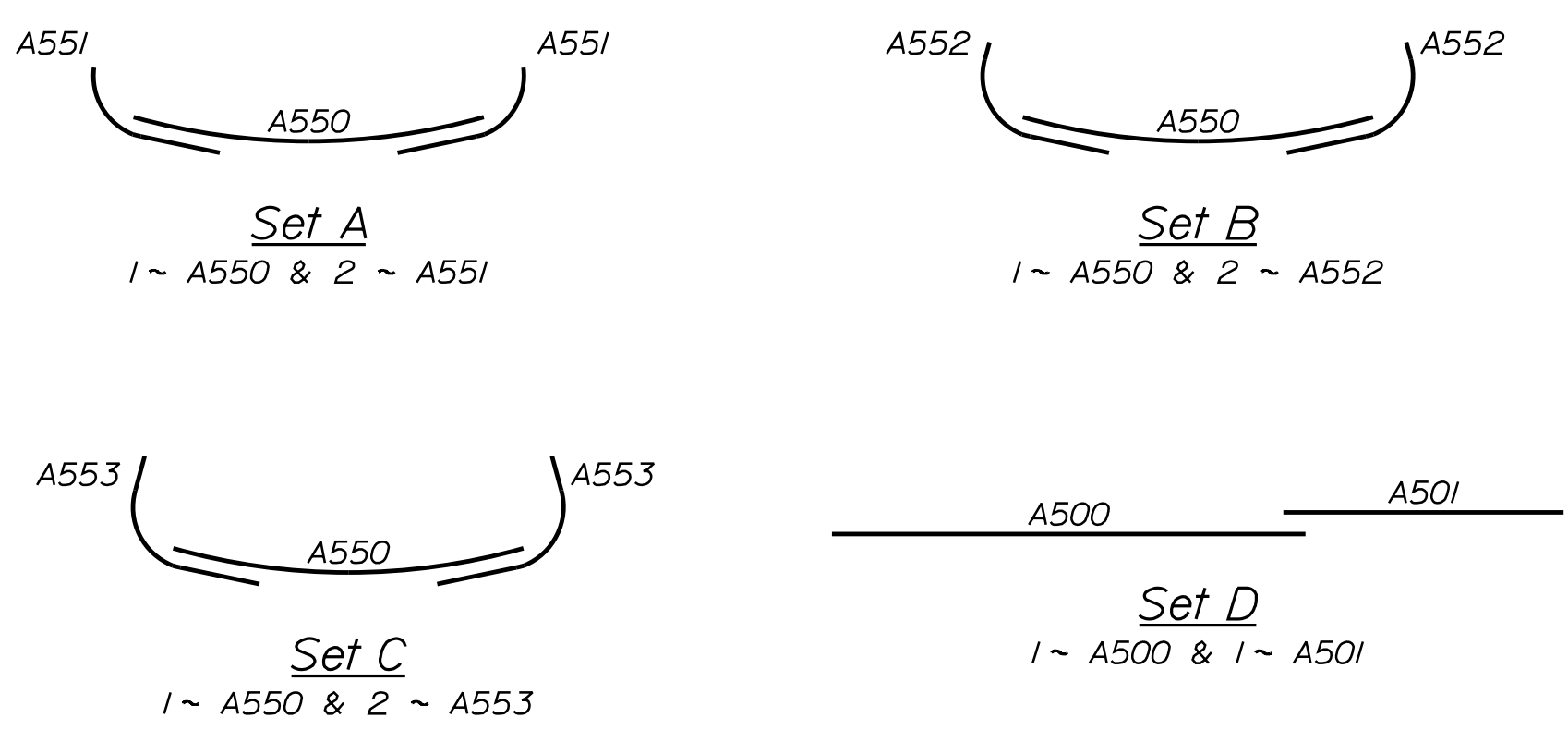
TYPICAL STEEL PIPE ARCH SECTION
10'-3" Span x 6'-9" Rise



SECTION A-A

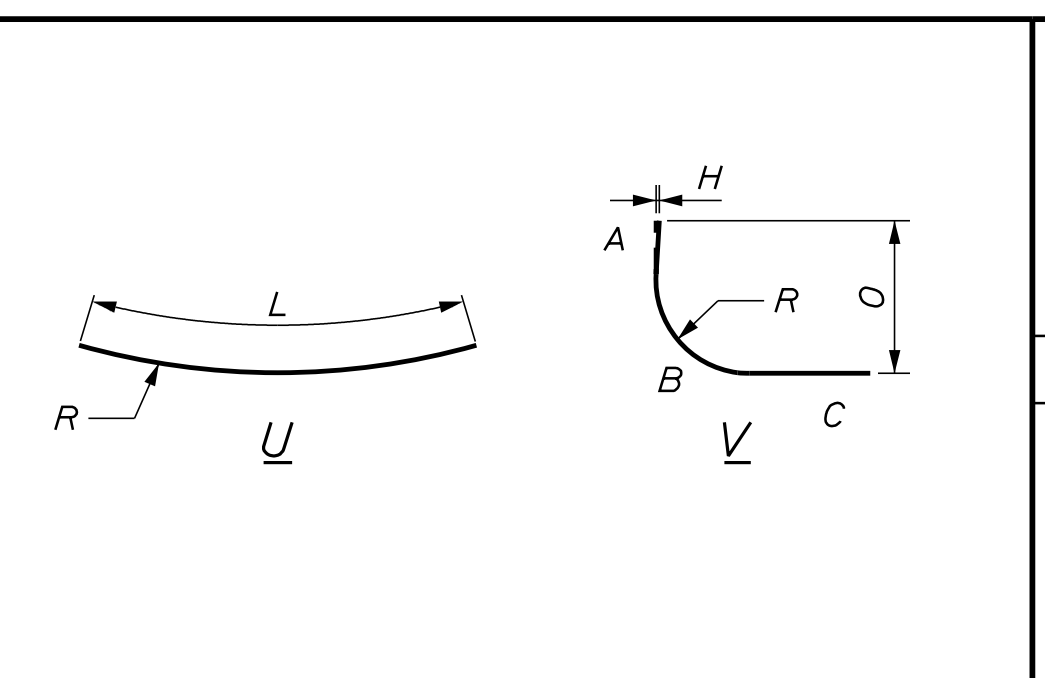


VIEW B-B
Stud Layout Detail



PLAN VIEW

STRAIGHT BARS				BENT BARS														
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
A500	15	40'-0"	Invert Culvert Liner	A550	63	8'-0"	U										14'-8"	Invert Culvert Liner
A501	15	23'-8"	Invert Culvert Liner	A551	4	3'-11 1/2"	V		2'-1 1/2"	1'-10"						1'-3 3/4"	1'-5"	Invert Culvert Liner
				A552	4	4'-6 3/4"	V	4 3/4"	2'-4"	1'-10"					1/4"	1'-10 3/4"	1'-5"	Invert Culvert Liner
				A553	118	4'-11 1/2"	V	9 1/2"	2'-4"	1'-10"					1/2"	2'-3 3/4"	1'-5"	Invert Culvert Liner



All dimensions are out-to-out of bar.
Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 315 and ACI Standard 318.
Reinforcing Bar: ASTM A 615/A 615M, Grade 60

GENERAL NOTES

1. The first two digits following the letter(s) of the mark indicate the size of the bar:

Mark "A502" = bar size #5
Mark "P805" = bar size #8
Mark "S650" = bar size #6

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2188(800)

PROCTOR BROOK BRIDGE
MEADOW BROOK
NEW PORTLAND SOMERSET COUNTY

INVERT LINING DETAILS

BRIDGE NO. 5943
WIN
21888.00
BRIDGE PLANS

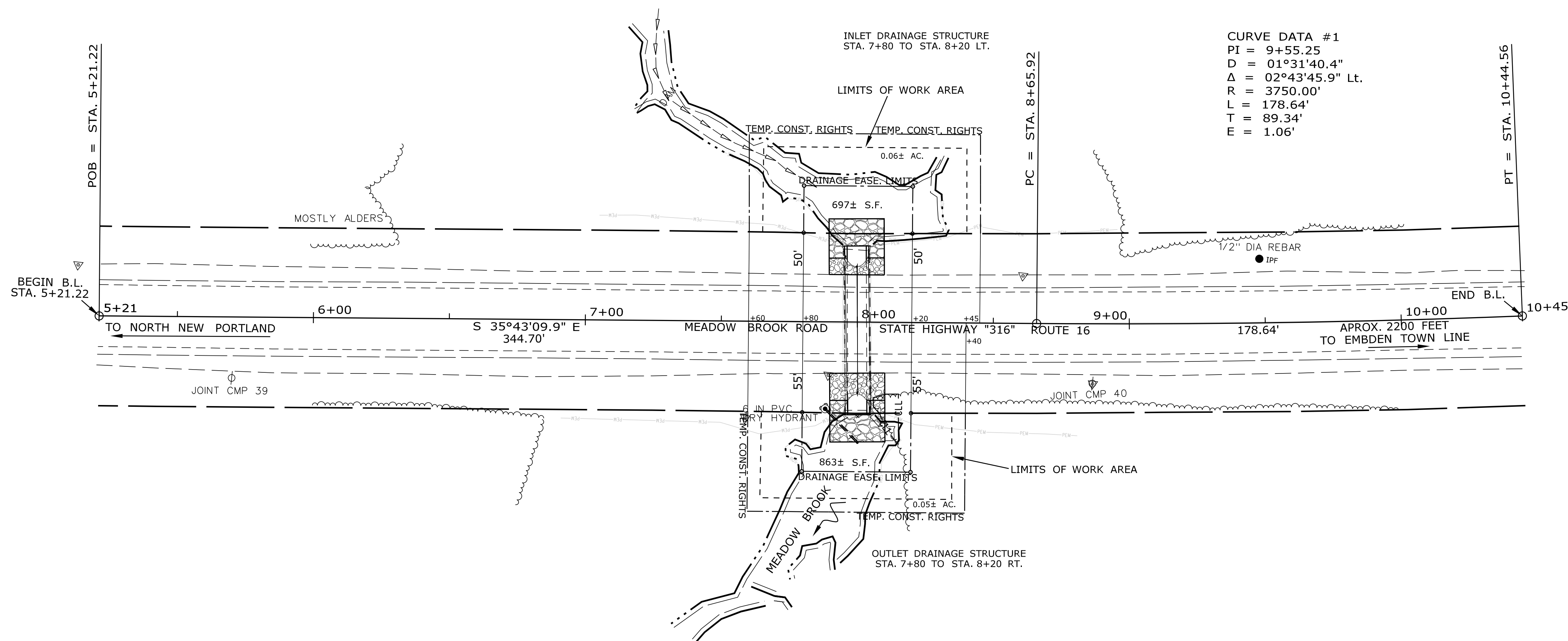
PROJ. MANAGER	BY	DATE
M. PARLIN	J. HASBROUCK	JULY 2018
CHECKED/REVIEWED	R. MYERS	SEPT 2018
DESIGNED/DETAILED	T. WHITE	JAN 2018
DESIGNED/DETAILED	B. SAVEN	JAN 2018
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SHEET NUMBER
7
OF 8

THIS PLAN WAS PREPARED IN CONNECTION WITH THE DEPARTMENT'S ACQUISITION OF REAL PROPERTY FOR TRANSPORTATION PURPOSES. IT CANNOT BE USED TO ESTABLISH LEGAL BOUNDARIES BETWEEN ADJUTING PROPERTY OWNERS.

AMY CARTER & GEORGE CARTER, JR.,
PERSONAL REPRESENTATIVES
ESTATE OF AMANDA J. CARTER
ITEM NO. (1)
DRAINAGE EASE. = 697± S.F. (1)
TEMP. CONST. RIGHTS = 0.06± AC. (1)
TOTAL AREA = 19.36± AC. (PER DEED)

GRID NORTH
US STATE PLANE NAD83 (GTM)
MAKE 200 WEST ZONE
COMBINED FACTOR 0.999750565



CURVE DATA #1
PI = 9+55.25
D = 01°31'40.4"
Δ = 02°43'45.9" Lt.
R = 3750.00'
L = 178.64'
T = 89.34'
E = 1.06'

RAYNOLD LEIGH PAINE
ITEM NO. (2)
DRAINAGE EASE. = 863± S.F. (1)
TEMP. CONST. RIGHTS = 0.05± AC. (1)
TOTAL AREA = 55± AC. (PER TOWN)

Filename: ... \00\ROW\MSTA001_RWPLAN1.dgn Division: BRIDGE Date: 9/18/2018 Username: Joshua.P.Hasbrouck

SOMERSET COUNTY COMMISSIONERS RECORDS
VOLUME 4, PAGE 189
1850, 66' WIDE

BRIDGE NO. 5943 PROCTOR BRIDGE OVER PROCTOR BROOK WIN 021888.00

SYMBOLS

● or ○	PIPF (IRON PIPE OR PIN FOUND)	○	WELL
□	S.T. (SEPTIC TANK)	---	GRAVING LIMIT LINE
△	TRAVERSE POINT	---	CONSTRUCTION LIMIT LINE
—	WATER LINE	—	PROPERTY LINE
—	GAS LINE	—	LIMITS OF WROUGHT PORTION (L.O.W.P.)
—	ELECTRIC LINE	—	EXISTING RIGHT OF WAY
—	TELEPHONE LINE	—	NEW RIGHT OF WAY
—	SEWER LINE	—	NEW ROW WITHIN EXIST. ROW
—		—	CONTROL OF ACCESS

ITEM	TECH	CHECKED
BASE MAP		
EXIST. R/W	PNS	
PROP. LINES	PNS	
AREAS		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016
NEW PORTLAND
RIGHT OF WAY MAP

NO.	DATE	REVISIONS DESCRIPTION	BY	PLAN FILED IN PLAN BOOK				COUNTY RECORD				DAVID BERNHARDT COMMISSIONER JOYCE NOEL TAYLOR CHIEF ENGINEER DATE	
				NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE	NO.	INSTRUMENT		DATE
						COND.	9/4/18	5326	52				

STATE HIGHWAY "316"
ROUTE 16 MEADOW BROOK ROAD
NEW PORTLAND SOMERSET COUNTY
FEDERAL AID PROJECT NO. STP-2188(800)

JANUARY 2018	RIGHT-OF-WAY MAP	D.O.T. FILE NO. 13-395
SCALE 1" = 25'	SHEET 1 OF 1	

SHEET NUMBER
8
OF 8